**IN THE UNITED STATES PATENT & TRADEMARK OFFICE**

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| Inventor (first named): | David Sutherland |
| Group Art Unit: | 1795 |
| Examiner Name: | Gregg Cantelmo |
| Attorney Docket No.: | 45283.118 |

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I hereby certify that this document is being electronically transmitted on this date May 29, 2009 to the U.S. Patent and Trademark Office, Attention: Gregg Cantelmo, Examiner, at Group Art Unit 1795 in Alexandria, VA 22313-1450.

Eileen Lucas

**EILEEN LUCAS**

DATED: May 29, 2009

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**RESPONSE TO OFFICE COMMUNICATION MAILED APRIL 30, 2009**

To: Assistant Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

This is in response to the Office Communication mailed April 30, 2009 and is within the one month period for reply. Please consider the remarks below.

**"Paper" to Correct Appellant's Appeal Brief's Summary of Claimed Subject Matter Under 37 CFR 41.37(c)(1)(v)**

The Appellant submits the following replacement section of the Appeal Brief "Summary of Claimed Subject Matter" in accordance with the Order of the Board of Patent Appeals and Interferences dated April 27, 2009.

Respectfully submitted.

By: _____

Edward Yoo (Reg. No. 41435)

CORRESPONDENCE ADDRESS 22828

## (v) Summary of Claimed Subject Matter

The present invention is directed to an improved interface between a current collector and a terminal interconnect in a solid oxide a fuel cell to minimize uneven loading on the adjacent terminal fuel cell. In particular, the present invention relates to a planar solid oxide fuel cell stack comprising a floating current collector. The current collector floats because it does not directly contact the interconnect to which it is immediately adjacent. This is achieved using a seal **(58)** and a compressible material **(60)** positioned between the current collector **(44)** and the terminal interconnect **(52)**, as is seen in Figure 4 and described in paragraphs 0027 and 0028 of the specification.

## Claim 1

Reference numerals for exemplary features corresponding to the elements of claim 1 are provided below.

1. (Original) A planar solid oxide fuel cell stack comprising a lower horizontal compression plate **(not shown)**, an upper compression plate, a plurality of interleaved fuel cells **(22)**, seals **(30, 32, 34, 36, 38, 40)** and interconnects **(12)**, a cathode current collector plate **(50)** and an anode current collector plate **(44)** disposed between the upper and lower compression plates, wherein the stack defines vertical fuel intake **(14)** and exhaust manifolds **(16)** and vertical air intake **(18)** and exhaust **(20)** manifolds, said stack comprising:

(a) a seal element **(58)** having a cell opening **(56)**;

(b) a compressible, conducting element **(60)** disposed within the cell opening **(56)** of the seal element **(58)**;

(c) wherein the seal element **(58)** and the compressible element are disposed between the cathode current collector plate **(50)** and a terminal interconnect **(52)** at the cathode end of the stack or between the anode current collector plate **(44)** and a terminal interconnect **(52)** at the anode end of the stack, or both.

As shown in **Figure 4**, an embodiment of a planar solid oxide fuel cell stack of independent claims 1 comprises a compression plate **(not shown)**, a cathode current collector **(50)**, a terminal interconnect **(52)**, a seal **(58)** having a cell opening **(56)** and a compressible conductive element **(60)** (see page 3, lines 3-6, paragraph 30).

The interleaved fuel cells **(22)** have a cathode surface and an anode surface (see page 2, lines 25-27, paragraph 21). The conductive element **(60)** is shaped to fit within the cell opening **(56)** of the seal element **(58)** (see page 3, lines 3-6, paragraph 30). Each fuel cell comprises an interconnect **(12)** that defines a fuel intake manifold **(14)**, an fuel exhaust manifold **(16)**, an air intake manifold **(18)** and an air exhaust **(20)** manifold (see page 2, lines 19-23, paragraph 21). As shown in **Figure 1, 2A and 2B** reactant flow is directed by seals **(30, 32, 34, 36, 38, 40)** (see lines 38-55, paragraph 55). An anode gasket seal **(32)** surrounds the fuel intake and exhaust manifolds **(14, 16)** and the anode surface **(44)** of the fuel cell, while excluding the air intake and exhaust manifolds **(16, 18)** (see page 2, lines 46-50, paragraph 22).

**Claim 6**

Reference numerals for exemplary features corresponding to the elements of claim 6 are provided below.

6. (Original) A planar solid oxide fuel cell stack having a compression plate **(not shown)** and a terminal fuel cell **(22)**, said fuel cell stack comprising:

(a) a current collector plate **(50)** comprising a substantially planar element disposed immediately adjacent the compression plate **(not shown)**;

(b) an interconnect plate **(52)** disposed immediately adjacent and in electrical contact with the terminal fuel cell **(22)**;

(c) a compressible layer comprising a compressible electrically conductive element **(60)** in electrical contact with the interconnect plate **(52)** and the current collector plate **(50)**.

As shown in **Figure 4**, an embodiment of a planar solid oxide fuel cell stack of independent claim 6 comprises a compression plate **(not shown)**, a cathode current collector **(50)**, a terminal interconnect **(52)**, a seal **(58)** having a cell opening **(56)** and a compressible conductive element **(60)** (see page 3, lines 3-6, paragraph 30).